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C-A OPERATIONS PROCEDURES MANUAL

15.3.3.10 AGS Main Magnet Power Supply Procedure for LOTO for Extended Shutdowns

(Booster/AGS Ring Power Supply Systems Group Procedure EPS-S-010)

Note: This document was formerly a C-A Group Procedure. The content of the group procedure was reviewed by the Technical Supervisor. All approvals and/or issue dates of the original group procedure are maintained for present use.

Text Pages 3 through 5

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Collider-Accelerator Department Chairman Date

M. Bannon

Group Procedure EPS-S-010
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Revision B

AGS MAIN MAGNET POWER SUPPLY PROCEDURE FOR LOTO FOR EXTENDED SHUTDOWNS

By: Michael Bannon

Date: 3/25/99 Rev.B 10/10/2006

Sht. 1 of 3

1. Open CB-52G from RK 5074 in the new control room by pressing the **Standby** push button. []
2. Switch motor from cycloconverter to the liquid rheostat (CB 19R opens and CB 19S closes) []
3. Open CB-52 and let the motor coast down, record the coast down time. _____min. []
4. Follow: OPM 2.6.6a to lockout AGS MMPS and allow ring access []
5. If the shutdown is during cold weather and there is a chance of water freezing then heaters will have to be put into the inductor houses. two heaters in each house.----
Inductor House STA I []
Inductor House STA II []
6. Notify line crew that we want the 13.8KV CB 911-15 in Bldg. 603 which feeds SIEMENS MG Set, opened & racked out of its cubicle. The Siemens Supervisor or his designee shall install his lock and tag on this CB 911-15 so that it is under his control. (NOTE: If possible have the line crew rack in the shorting breaker which tie the cables which feed the Siemens MG Set to ground) []
7. Take the key from lock which was installed on the 911-15 CB and put in the lock box next to the 242 Magnet area. Then the Siemens Supervisor or his designee shall install a lock and tag on the lock box and be the responsible person all others who need to LOTO the MG Set will install their locks on this lock box. []
8. Once CB 911-15 in Bldg 603 has been LOTO verify at 3 locations (1--on LE1 In old control room, 2nd in the new control room RK 5090 and 3rd in L13 rack in Bldg. 928 basement that the 13.8KV read zero volts. When it has been verified at the 3 locations, then open cubicle L13 in the Siemens Basement and verify using a tic tracer that the 13.8 KV feed is indeed off. (**Note: CAT 4 –PPE must be worn when performing this test.**) After it has been verified that the 13.8KV is deenergized install a set of ground cables in rack L13 from each phase to ground. Install a sign in Bldg 603 on CB 911-15 stating there are grounds installed in Bldg 928 cubicle L13. Now CB-52M can be rack out wearing CAT-4 PPE and the Kirk Lock Key RE11012 can be inserted in motor pit door for access. []
9. Have the line crew rack out the 480 VAC 3 Phase feed to the exciter power supply which is CB-43 (CB 52E) which is located in the old RF Subyard. []

The Siemens Supervisor or his designee shall LOTO this CB and be the responsible person. []

10. LOTO all the 125 VDC (CAT 2 –PPE) CB located inside the 120 VDC distribution panel located on the North Wall Of the old control room.

CB-1 [], CB-2 [], CB-3 [], CB-4 [], CB-5 []
CB-6 [], CB-7 [], CB-8 [], CB-9 [], CB-10 []

11. LOTO the following 480 VAC FDS in Siemens Basement (PPE- CAT 4)

EPP-44-2	FDS #5	Oil Lift Pumps	[]
	FDS #6	Oil Lift Pumps	[]
	FDS #9	Brake P.S.	[]
PP-44-1-B-	FDS #8	LB-1 STA I F Bank	[]
	FDS #9	LB-1 STA I P Bank	[]
	FDS #1	LE3	[]
PP-44-1-A-	FDS #3	LC-1 STA II P Bank	[]
	FDS #4	LC-1 STA II F Bank	[]
	FDS #1	LA1L	[]
	FDS #2	LA2L	[]

12. Individual cubicles which will be worked on must be checked for any voltages which may be present. The source of the voltage must be identified and proper LOTO installed. []

Note:

When the Shutdown has ended the Siemens Supervisor or his Designee will do an inspection of all areas where work has been done to insure that all covers are reinstalled and the MG Set is safe to come in.

Removing LOTO

1. Remove all LOTO From the 125VDC CB located inside the old control room in the DC Panel Box. (CAT 2- PPE) []
2. Remove LOTO from all the following FDS In the basement and re energize circuits. (CAT 4- PPE)

EPP-44-2	FDS #5	Oil Lift Pumps	[]
	FDS #6	Oil Lift Pumps	[]
	FDS #9	Brake Power Supply	[]
PP-44-1-B-	FDS #8	LB-1 STA I F Bank	[]
	FDS #9	LB-1 STA I P Bank	[]
PP-44-1-A-	FDS #3	LC-1 STA II P Bank	[]
	FDS #4	LC-1 STA II F Bank	[]

3. Remove LOTO from CB- 52E (CB-43) in old RF Yard and have line crew rack it in. []
- 4.. All LOTO must be removed from the Lock Box next to 242 Magnet Area before the ground cables can be removed from the 13.8 KV bus in cubicle L13 in Siemens Basement. Once the ground cables have been removed the front door must be bolted shut and the UEB-1 lock installed. Then the Supervisor or his designee shall remove his lock and tag from the lock box next to the 242 Magnet Area. He shall then take the key which has been locked in this box and call the line crew and request that they meet him in Bldg. 603 for the installation of CB 911-1 []
5. Remove the LOTO from CB 911-15 in Bldg 603. []
6. Notify all personnel that the 13.8 KV feed to Bldg. 928 will be energized, and that all personnel are accounted for. []
7. If they are ready to run, remove the heaters which were install in inductor houses
 STA I []
 STA II []
8. Remove LOTO from the lock box inside the Rectifier Room and unlock the 95 Switches in the Basement when we are ready run. []